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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,906	01/29/2001	Eyal Assa	70705	7901

22242 7590 07/27/2004

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120 SOUTH LA SALLE STREET
SUITE 1600
CHICAGO, IL 60603-3406

EXAMINER

HOLMES, MICHAEL B

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,906

Applicant(s)

ASSA ET AL.

Examiner

Michael B. Holmes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11-23, 25, and 27-33 is/are rejected.
- 7) ☒ Claim(s) 8, 10, 24 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/6/2002</u> . | 6) <input type="checkbox"/> Other: _____ |



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Examiner's Detailed Office Action

1. This Office Action is responsive to application **09/771,906**, filed **January 29, 2001**.
2. **Claims 1-33** have been examined.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 13 & 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner cannot quite grasp the meaning of the two claims. Especially when examiner cannot find proper support for a "tic control" in the specification. Thus, in an attempt to avoid speculation on the part of the part of the examine. Further clarification is required by applicant. Additionally, there is a typo in claim 28 i.e., "roved" implies "moved."

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8, 9, 11-12, 17-23, 25, 27-30, & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lyles et al.* (USPN 5,926,459) in view of *Ahmed et al.* (USPN 5,946,346).

Regarding claim 1: *Lyles et al.* discloses a traffic control system for scheduling fixed size traffic elements from a number of queues for transmission on a link, (*Lyles et al.* Abstract) each queue having associated traffic parameters, (*Lyles et al.* Abstract) the system comprising a scheduler and a calendar in a memory for storing a transmission schedule of the queues, (*Lyles et al.*

Abstract) the scheduler shaping the transmission schedule by updating the schedule in the calendar in dependence on inputted traffic parameters of each queue, (*Lyles et al.* Abstract).

Lyles et al. does not disclose the system includes an amplifier to amplify the traffic parameters by a factor K prior to input to the scheduler, the scheduler and calendar being adapted to operate using the amplified parameters. However, *Ahmed et al.* teaches system includes an amplifier to amplify the traffic parameters by a factor K prior to input to the scheduler, the scheduler and calendar being adapted to operate using the amplified parameters. (*Ahmed et al.* FIG. 3, item 52, C 5, L 28-38) It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the references because in many wireless communications systems, and especially in cellular communication systems, it is important to control the transmitted

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power of a traffic channel in order to reduce cochannel interference. Cochannel interference is generated by other transmitters assigned to the same frequency band as the desired signal. And because all users transmit traffic on the same carrier frequency in a code division multiple access (CDMA) cellular system, reducing cochannel interference in CDMA systems is especially important because it directly impacts system capacity. If the cochannel interference is reduced, the CDMA system capacity may be increased. Therefore, it is a design goal to transmit a traffic signal with only an amount of power necessary to provide acceptable signal quality at the receiver, after it passes through the channel. (*Ahmed et al.* C 1, L 13-27)

Regarding claim 17: *Lyles et al.* discloses a traffic control method scheduling fixed size traffic elements from a number of queues for transmission on a link, (*Lyles et al.* Abstract) each queue having associated traffic parameters, (*Lyles et al.* Abstract) the method comprising the steps of: storing a transmission schedule of the queues in a memory; (*Lyles et al.* C 10, L 17-23) shaping the transmission schedule by updating the schedule in the calendar in dependence on inputted traffic parameters of each queue; (*Lyles et al.* C 8, L 25-50). *Lyles et al.* does not disclose the step of shaping includes the step of amplifying the traffic parameters by a factor K, the memory and the shaping step being adapted to operate using the amplified parameters. However, *Ahmed et al.* teaches step of shaping includes the step of amplifying the traffic parameters by a factor K, the memory and the shaping step being adapted to operate using the amplified parameters. (*Ahmed et al.* FIG. 3, item 52, C 5, L 28-38) It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the references because in many wireless communications systems, and especially in cellular communication systems, it is

important to control the transmitted power of a traffic channel in order to reduce cochannel interference. Cochannel interference is generated by other transmitters assigned to the same frequency band as the desired signal. And because all users transmit traffic on the same carrier frequency in a code division multiple access (CDMA) cellular system, reducing cochannel interference in CDMA systems is especially important because it directly impacts system capacity. If the cochannel interference is reduced, the CDMA system capacity may be increased. Therefore, it is a design goal to transmit a traffic signal with only an amount of power necessary to provide acceptable signal quality at the receiver, after it passes through the channel. (*Ahmed et al.* C 1, L 13-27)

Regarding claim 31: *Lyles et al.* discloses a computer-readable medium, on which is stored a computer program of instructions for a processor to schedule fixed size traffic elements from a number of queues for transmission on a link, (*Lyles et al.* C 10, L 05-23) each queue having associated traffic parameters, (*Lyles et al.* Abstract) the program comprising, in combination: means for causing the processor to store a transmission schedule of the queues in a memory; (*Lyles et al.* C 10, L 05-23) means for causing the processor to shape the transmission schedule by updating the schedule in the calendar in dependence on inputted traffic parameters of each queue; (*Lyles et al.* C 8, L 25-50). *Lyles et al.* does not disclose the means for causing the processor to shape the schedule includes means for amplifying in the memory the traffic parameters by a factor K, the means for causing the processor to shape the schedule being adapted to operate using the amplified parameters. However, *Ahmed et al.* teaches the means for causing the processor to shape the schedule includes means for amplifying in the memory the

traffic parameters by a factor K , the means for causing the processor to shape the schedule being adapted to operate using the amplified parameters. (*Ahmed et al.* FIG. 3, item 52, C 5, L 28-38) It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the references because in many wireless communications systems, and especially in cellular communication systems, it is important to control the transmitted power of a traffic channel in order to reduce cochannel interference. Cochannel interference is generated by other transmitters assigned to the same frequency band as the desired signal. And because all users transmit traffic on the same carrier frequency in a code division multiple access (CDMA) cellular system, reducing cochannel interference in CDMA systems is especially important because it directly impacts system capacity. If the cochannel interference is reduced, the CDMA system capacity may be increased. Therefore, it is a design goal to transmit a traffic signal with only an amount of power necessary to provide acceptable signal quality at the receiver, after it passes through the channel. (*Ahmed et al.* C 1, L 13-27)

Regarding claim 2: further comprising a parameter memory arranged to store the amplified parameters as integers for input to the scheduler. (*Lyles et al.* C 10, L 16-23)

Regarding claim 3 & 19: which the traffic parameters include quality of service parameters. (*Lyles et al.* C 1, L 60-62)

Regarding claim 4 & 20: which the transmission schedule for a respective queue is updated after a transmission from the queue. (*Lyles et al.* C 8, L 13-24)

Regarding claim 5 & 21: in which the calendar comprises a linear array having a number of indices, each index corresponding to a transmission time and being capable of referencing a list of queues, queues referenced by a low value index being transmitted before queues referenced by a higher value index, wherein the updating of the transmission schedule comprises the recalculation of the index to refer to the queue. (*Lyles et al.* C 6, L 45-60)

Regarding claim 6, 7, 9, 18, 22, 23, & 25: “Official Notice” is taken that:

leaky buckets (*Kidder et al.* USPN 5,903,735; C 6, L 60-62),

constant bit rates (CBR) (*Pasternak et al.* USPN 5,936,949; C 4, L 36),

variable bit rates (VBR) (*Pasternak et al.* USPN 5,936,949; C 5, L 33),

truncating integers (*Benson* USPN 5,940,833; C 2, L 23-32),

are well known in the arts.

Regarding claim 11 & 27: further comprising a transmitter arranged to traverse the array from lowest index to highest traversing one index per transmission time, wherein the transmitter allows a queue to transmit if it is referenced by the index currently traversed. (*Lyles et al.* C 6, L 10-25)

Regarding claim 12 & 28: in which recalculation of the index results in the reference to the queue being moved to an index with a higher value. (*Lyles et al.* C 6, L 61 to C 7, L 16)

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Regarding claim 29: in which a recalculation resulting in an index value greater than the maximum index of the array is adjusted so as to wrap around the array. (*Lyles et al.* C 6, L 31-43)

Regarding claim 30: further comprising the step of storing the number of transmission times passed since each queue's last transmission, the value being used as a traffic parameter input. (*Lyles et al.* C 13, L 06-16)

7. Claim 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lyles et al.* (USPN 5,926,459) in view of *Ahmed et al.* (USPN 5,946,346) in further view of *Pasternak et al.* (USPN 5,936,949).
Lyles et al. and *Ahmed et al.* have been discussed above and do not disclose the limitations embodied in claims 15 & 16. However, *Pasternak et al.* the limitations embodied in claims 15 & 16.

Regarding claim 15 & 16: comprising a Field Programmable Gate Array FPGA and an application specific integrated circuit (ASIC). (*Pasternak et al.* C 6, L 45-62) It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the references because the Asynchronous Transfer Mode (ATM) method of transmitting and switching multimedia information is replacing older circuit and packet switching techniques, allowing flexible, fast and cost effective provision of new telecommunications service. Among these services are Internet access, Basic rate ISDN, fractional T1/E1 support of cellular PCN network and LAN traffic routing. These services require expensive infrastructure of transmission facilities, such as copper lines, fiber optics, cable TV or hybrid fiber-coax (HFC). In a competitive environment in which some new telecommunication service providers own some or none of

the above facilities, wireless is the other alternative for timely and cost effective deployment of transmission networks. (*Pasternak et al.* C 1, L 12-25)

8. Claim 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Lyles et al.* (USPN 5,926,459) in view of *Ahmed et al.* (USPN 5,946,346) in further view of *Pasternak et al.* (USPN 5,936,949).

Regarding claim 32 & 33: *Lyles et al.* discloses executing a scheduling of fixed size traffic elements from a number of queues for transmission on a link, (*Lyles et al.* Abstract) each queue having associated traffic parameters, (*Lyles et al.* Abstract) the program comprising the steps of: storing a transmission schedule of the queues in a memory; (*Lyles et al.* C 10, L 17-23) shaping the transmission schedule by updating the schedule in the calendar in dependence on inputted traffic parameters of each queue; (*Lyles et al.* C 8, L 25-50). *Lyles et al.* does not teach the step of shaping includes the step of amplifying the traffic parameters by a factor K, the memory and the shaping step being adapted to operate using the amplified parameters and a field programmable gate array programmed and a application specific integrated circuit. *Ahmed et al.* discloses the step of shaping includes the step of amplifying the traffic parameters by a factor K, the memory and the shaping step being adapted to operate using the amplified parameters (*Ahmed et al.* FIG. 3, item 52, C 5, L 28-38). However, *Ahmed et al.* does not teach a field programmable gate array programmed and a application specific integrated circuit. *Pasternak et al.* discloses a field programmable gate array programmed and a application specific integrated circuit (*Pasternak et al.* C 6, L 45-62) It would have been obvious at the time the invention was

made to a person having ordinary skill in the art to combine the references because the Asynchronous Transfer Mode (ATM) method of transmitting and switching multimedia information is replacing older circuit and packet switching techniques, allowing flexible, fast and cost effective provision of new telecommunications service. Among these services are Internet access, Basic rate ISDN, fractional T1/E1 support of cellular PCN network and LAN traffic routing. These services require expensive infrastructure of transmission facilities, such as copper lines, fiber optics, cable TV or hybrid fiber-coax (HFC). In a competitive environment in which some new telecommunication service providers own some or none of the above facilities, wireless is the other alternative for timely and cost effective deployment of transmission networks. (*Pasternak et al.* C 1, L 12-25)

Claim Objection(s)

9. Claims 8, 10, 24 & 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and (listed of form **PTO-892**) not relied upon is considered pertinent to applicant's disclosure as follows. Applicant or applicant's representative is respectfully reminded that in process of patent prosecution i.e., amending of claims in response to a rejection of claims set forth by the Examiner per Title 35 U.S.C. The patentable novelty must be

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clearly shown in view of the state of the art disclosed by the references cited and any objections made. Moreover, applicant or applicant's representative must clearly show how the amendments avoid or overcome such references and objections. *See 37 CFR § 1.111(c).*

Correspondence Information

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Michael B. Holmes** who may be reached via telephone at **(703) 308-6280**. The examiner can normally be reached Monday through Friday between 8:00 a.m. and 5:00 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding After Final issues, please send it to **(703) 746-7238**. If you need to send an Official facsimile transmission, please send it to **(703) 746-7239**. If you would like to send a Non-Official (draft) facsimile transmission the fax is **(703) 746-7240**. If any attempts to reach the examiner by telephone are unsuccessful, the **Examiner's Supervisor, Anthony Knight**, may be reached at **(703) 308-3179**.

Any response to this office action should be mailed too:

Director of Patents and Trademarks Washington, D.C. 20231. Hand-delivered responses should be delivered to the Receptionist, located on the fourth floor of **Crystal Park II, 2121 Crystal Drive Arlington, Virginia**.

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Michael B. Holmes

Patent Examiner

Artificial Intelligence

Art Unit 2121

United States Department of Commerce

Patent & Trademark Office

Ramesh Patel
RAMESH PATEL
PRIMARY EXAMINER 7/26/04
For Anthony Knight